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27074 7590 09/30/2008

OLIFF & BERRIDGE, PLC.
P.O. BOX 320850
ALEXANDRIA, VA 22320-4850

EXAMINER

ZHENG, JACKY X

ART UNIT

PAPER NUMBER

2625

DATE MAILED: 09/30/2008

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/604,200

06/30/2003

Reiner Eschbach

112221

1199

TITLE OF INVENTION: SYSTEMS AND METHODS FOR ESTIMATING AN IMAGE MARKING PROCESS USING SCANNED IMAGE ATTRIBUTES

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1440	\$300	\$0	\$1740	12/30/2008

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

27074 7590 09/30/2008

OLIFF & BERRIDGE, PLC.
P.O. BOX 320850
ALEXANDRIA, VA 22320-4850

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/604,200 06/30/2003 Reiner Eschbach 112221 1199

TITLE OF INVENTION: SYSTEMS AND METHODS FOR ESTIMATING AN IMAGE MARKING PROCESS USING SCANNED IMAGE ATTRIBUTES

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1440	\$300	\$0	\$1740	12/30/2008

EXAMINER	ART UNIT	CLASS-SUBCLASS
ZHENG, JACKY X	2625	358-003060

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,200	06/30/2003	Reiner Eschbach	112221	1199
27074	7590	09/30/2008	EXAMINER	
OLIFF & BERRIDGE, PLC. P.O. BOX 320850 ALEXANDRIA, VA 22320-4850			ZHENG, JACKY X	
			ART UNIT	PAPER NUMBER
			2625	
DATE MAILED: 09/30/2008				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 935 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 935 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability	Application No.	Applicant(s)	
	10/604,200	ESCHBACH ET AL.	
	Examiner	Art Unit	
	JACKY X. ZHENG	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to July 16, 2008.
2. ☒ The allowed claim(s) is/are 1-12,14, 16,18, 27-29, 31, 33-37, 39 and 41-42.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

/Twyler L. Haskins/
Supervisory Patent Examiner, Art Unit 2625

DETAILED ACTION

1. This office action is in response to applicant's amendments and remarks filed under 37 CFR 1.116 on June 18, 2008 and the request for continued examination filed under 37 CFR 1.114 on July 16, 2008.
2. **Claims 1, 19, 27 and 35** have been amended.
3. **Claims 13, 15, 17, 22, 24, 30, 32, 38 and 40** have been cancelled as of previous record.
4. **Claims 19-21, 23 and 25-26** have also been cancelled in Examiner's amendment below.
5. **Claims 1-12, 14, 16, 18, 27-29, 31, 33-37, 39 and 41-42** are currently allowed.

Request for Continued Examination (RCE)

6. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 16, 2008 has been entered.

Terminal Disclaimer

7. The terminal disclaimer filed on April 27, 2007 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of any patent granted on Application Number 10/739,176 (or Patent Number 7,336,401) has been reviewed and is accepted. The terminal disclaimer has been recorded.

EXAMINER'S AMENDMENT

8. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR

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1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

9. Authorization for this examiner's amendment was given in a telephone interview with Mr. Jarrett L. Silver (Reg. No. 60,239) on September 23, 2008.

10. The application has been amended as follows:

a. With regard to **Claims 19-21, 23 and 25-26**, the claims are authorized to be cancelled.

b. With regard to **Claim 27**, the claim is amended as following:

Claim 27: A computer readable medium encoded with computer executable instructions for determining an image marking process used to create a printed image, instructions, which when executed by a processor, cause the processor to perform operations comprising:

scanning the printed image;

determining spatial characteristics of the printed image;

analyzing the spatial characteristics of the printed image;

determining local spatial variations in the printed image based on the analyzed spatial characteristics; and

determining an analog tone or binary image marking process used to create the printed image based on the determined local spatial variations in the printed image;

wherein determining local spatial variations of the printed image includes determining local variations in input image, determining half tone dot periodicity, and

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determining frequency or noise characteristics; and wherein determining the image marking process does not require obtaining additional spectral information obtained through additional spectral channels, and does not require a power spectrum of the image data.

c. With regard to **Claim 35**, the claim is amended as following:

Claim 35: An image marking process identification system for a printed image, comprising:

a memory; and

an image marking process identification determination circuit, routine or application that identifies at least one of a media type for the printed image or an image marking process used to process the printed image, by processing the printed image to determine spatial characteristics of the printed image; analyzing the spatial characteristics of the printed image; determining local spatial variations in the printed image based on the analyzed spatial characteristics; and determining an analog tone or binary image marking process used to create the printed image based on the determined local spatial variations in the printed image;

wherein determining local spatial variations of the printed image includes determining local variations in input data, determining half tone dot periodicity, and determining frequency or noise characteristics; and wherein determining the image marking process does not require obtaining additional spectral information obtained through additional spectral channels, and does not require a power spectrum of the image

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data.

- d. With regard to **Claim 36**, the claim is amended as following:

Claim 36: The image marking process identification system according to claim 35, wherein local spatial variations include dispersion and periodicity.

- e. With regard to **Claim 37**, the claim is amended as following:

Claim 37: The image marking process identification system according to claim 35, wherein spatial characteristics include halftone dot periodicity, halftone screen frequency and halftone screen noise.

- f. With regard to **Claim 39**, the claim is amended as following:

Claim 39: The image marking process identification system according to claim 35, wherein the analyzing comprises determining one or more of an area average or mean of pixels in an image data block of the scanned printed image, an area variance of the pixels for the image data block, extreme minima value, \min_a , of the pixels for the image data block, extreme maxima value, \max_a , of the pixels for the image data block.

- g. With regard to **Claim 41**, the claim is amended as following:

Claim 41: The image marking process identification system according to claim 39, the analyzing further comprises one or more of: determining a ratio of

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the area variance to mean determined for a given block, calculating a distribution of the mean values for large pixel areas, comparing the calculated mean value to the determined \min_a and/or \max_a values, and determining a distance between maxima/minima.

h. With regard to **Claim 42**, the claim is amended as following:

Claim 42: The image marking process identification system according to claim 35, wherein determining an image marking process further comprises setting color attributes for storage, transmission, transformation or reproduction.

REASONS FOR ALLOWANCE

11. The following is an examiner's statement of reasons for allowance:

The instant invention is generally relates to an invention relates to automatically identifying a marking process used to form an image on a substrate.

With regard to Claim 1, the closest prior arts of record, Sharma (U.S. Patent No. 6,353,675) and Wang (U.S. Patent No. 6,031,618), do not disclose or suggest, among the other limitations, the additional required limitation of "*wherein determining spatial variations of the printed image includes determining local variations in input data, determining half tone dot periodicity, **and** determining frequency or noise characteristics; **and** wherein determining the image marking process does not require obtaining additional spectral information obtained through additional spectral channels, **and** does not require a power spectrum of the image data*".

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These additional features in combination with all the other features required in the claimed invention are neither taught nor suggested by Sharma and Wang.

With regard to Claims 2-12, 14, 16 and 18, the claims are depending from the independent Claim 1, each encompasses the required limitations recited in the independent claim discussed above.

With regard to Claim 27, the closest prior arts of record, Sharma (U.S. Patent No. 6,353,675) and Wang (U.S. Patent No. 6,031,618), do not disclose or suggest, among the other limitations, the additional required limitation of “*wherein determining local spatial variations of the printed image includes determining local variations in input data, determining half tone dot periodicity, **and** determining frequency or noise characteristics; **and** wherein determining the image marking process does not require obtaining additional spectral information obtained through additional spectral channels, **and** does not require a power spectrum of the image data”.*

These additional features in combination with all the other features required in the claimed invention are neither taught nor suggested by Sharma and Wang.

With regard to Claims 28-29, 31 and 33-34, the claims are depending from the independent Claim 27, each encompasses the required limitations recited in the independent claim discussed above.

With regard to Claim 35, the closest prior arts of record, Sharma (U.S. Patent No. 6,353,675) and Wang (U.S. Patent No. 6,031,618), do not disclose or suggest, among the other limitations, the additional required limitation of “*wherein determining local spatial variations of*

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*the printed image includes determining local variations in input data, determining half tone dot periodicity, **and** determining frequency or noise characteristics; **and** wherein determining the image marking process does not require obtaining additional spectral information obtained through additional spectral channels, **and** does not require a power spectrum of the image data".*

These additional features in combination with all the other features required in the claimed invention are neither taught nor suggested by Sharma and Wang.

With regard to Claims 36-37, 39 and 41-42, the claims are depending from the independent Claim 35, each encompasses the required limitations recited in the independent claim discussed above.

12. Therefore, Claims No. 1-12, 14, 16, 18, 27-29, 31, 33-37, 39 and 41-42 are allowed.

13. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacky X. Zheng whose telephone number is (571) 270-1122. The examiner can *normally* be reached on Monday-Friday, 8:30 a.m. - 5 p.m., Alt. Friday Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Twyler M. Lamb can be reached on (571) 272-7406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

15. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jacky X. Zheng/
Examiner, Art Unit 2625
September 23, 2008

/Twyler L. Haskins/
Supervisory Patent Examiner, Art Unit 2625